## Searching Sequence Using HMM Profile (HMM3 Search)

The HMM3 search tool reads a HMM profile from a file and searches a sequence for significantly similar sequence matches.

The sequence must be selected in the Project View or there must be an active Sequence View window opened.

If the selected sequence is nucleic and profile HMM is built from amino alignment, the sequence will be automatically translated and searched in all possible frames (6 totally).

If a profile HMM is built for nucleic alignment, the search is performed for both strands (direct and complement).

The *HMM3 search* accepts the HMMER2 HMM profiles (amino only) as a backward compatibility feature. An interesting post about using the HMMER2 models with the HMMER3 is available on the Sean Eddy's blog.

U HMM3 Search		? ×
Input and output	Reporting thresholds Acceleration heuristics Other	
Query profile HMM file	:	
▼ Save annotation(s	) to	
Existing table		-
Oreate new tag	ble	
<ul> <li>Annotation parameter</li> </ul>	eters	
Group name	<auto></auto>	*
Annotation name	hmm_signal	ate 🔀
	Run Cancel	Help

For example, reporting thresholds options can be configured using the dialog:

U HMM3 Search	? ×
Input and output Reporting thresholds Acceleration heuristics Other	
Report domains with E-value less than	1E+1
Report domains with score greater than	
Score threshold:	0.01 🛓
<ul> <li>Use profile's GA gathering cutoffs</li> </ul>	
Use profile's NC noise cutoffs	
Use profile's TC trusted cutoffs	
Number of significant sequences for domain E-value calculation	0.00
Run	Cancel Help

The search results are stored as sequence annotations in the Genbank file format.

	200k	400k	600k	800k	1m	1.2	m	1.4m	1.6m	1.8m	2m	2.2m	2.4m	2.6m	2.8m
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7 088		7095	7.1k	7105	7110		15	7120	7125	713	0 71	35	7140	7145	7150
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Name							Value								
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							9.7635								
···· Bias								54e-02							
	···· Conditional e-value					5.96204e-17									
	Envelope of domain location					70917177									
	···· HMM model					fn3 Accession number in PFAM database: PF00041									
		- HMM re	-				187								
			ndent e-va	alue				74e-17							
		Score					49.864								
🔃 🗖 hmm_signal						72887372									
庄 🗖 hmm_signal						7387	7473								

① The HMM3 search works only with files that contain a single HMM model.